

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/568,699 Confirmation No.: 7132
Applicant(s) : Nicolaas A. DE MUNCK *et al.*
File Date : September 29, 2006
TC/A.U. : 1796
Examiner : Liam J. HEINCER
Title : *"Improvements In Or Relating To Plasticizer"*
Atty. Docket No. : 2003M091
Customer No. : 23455 Date: October 22, 2010

Mail Stop Appeal Brief-Patents

Commissioner for Patents

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REPLY BRIEF SUBMITTED UNDER 37 C.F.R. § 41.41

Appellants respectfully request entry and consideration of this Reply Brief submitted in response to the Examiner's Answer of August 31, 2010, and to supplement the Appeal Brief of July 8, 2010.

Argument

I. The Examiner erred in finally rejecting Claims 10-12, 19, 23, and 26-28 as being unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 4,543,420 to Godwin *et al.* (herein "Godwin") in view of U.S. Patent No. 5,798,319 to Schlosberg *et al.* (herein "Schlosberg"). The subject claims stand or fall together.

II. The Examiner erred in finally rejecting Claims 10-12, 19, 23, and 26-28 as being unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,880,310 to Ageishi *et al.* (herein "Ageishi") in view of Schlosberg. The subject claims stand or fall together.

Appellants respectfully submit that the Office has erred in concluding that the pending claims are unpatentable in the two obviousness rejections of record. In particular, "[t]he key to supporting any rejection under 35 U.S.C. § 103 is the *clear articulation* of the reason(s) why the claimed invention would have been obvious." (M.P.E.P. § 2141) (emphasis added). Applicants respectfully submit that a clear, explicit articulation of why the pending claims are obvious has not been provided, especially considering the great and many differences between that of the claimed invention and prior art.

The substance of the rejections only represents a piecemeal of the picking and choosing of features from the prior art of record working off the impermissible hindsight of Appellants' Specification. In particular, the Office has employed an obvious to try standard that a claim would have been obvious where one skilled in the art is choosing from an *infinite* rather than finite number of identified, *unpredictable* chemical solutions, with *no* reasonable expectation of success. Indeed, the Office recognizes as much and admits that "[t]he Office recognizes that all of the claimed effects and physical properties are not positively stated by the reference." (Answer at page 4, bottom, and page 6, second paragraph).

The Answer goes on to state that "[t]herefore, the claimed effects and physical properties would inherently be achieved by combining the disclosed ingredients." (Answer at page 6, second paragraph). Appellants respectfully disagree because this statement negates the process limitations' effect on the results achieved even if all the ingredients were the same. Furthermore, if the Office intends to rely on a theory of inherency, Appellants note that "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish

the inherency of that result or characteristic. (citation omitted) To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" (M.P.E.P. § 2112 IV. (Requirements of Rejection Based On Inherency; Burden of Proof)). Furthermore, the subject claims are process claims and not composition of matter claims. Thus, even if all the ingredients were the same as alleged by the Office, to disregard process limitations, including the practicing, in the same or different order, or omission of certain steps, in the chemical arts would simply not be fair to patent applicants given the complexity and unpredictability of chemical interactions at the atomic and sub-atomic level.

For example, the Office places considerable reliance on Schlosberg for alternative steps to teach or suggest elements not taught by the primary references. However, it is clear that the secondary reference does not teach, in fact, avoidance of stripping prior to filtering. Rather, as set forth in detail in column 5 of Schlosberg, line 40 bridging col. 6, line 9, the reference teaches:

- (i) esterification;
- (ii) addition of absorbents;
- (iii) addition of base;
- (iv) removal of water by "heat" and "in a vacuum flash step" (e.g., stripping)**
- (v) filtration of solids from the ester mixture containing the bulk of the excess alcohol . . . ;**
- (vi) removal of excess alcohol by stripping;
- (vii) removal of residual solids by filtration. (emphasis added).**

Thus, Schlosberg does not avoid a stripping step before filtration. Step (iv), listed as (d) in Schlosberg, heats the product, along with water and alcohol, in the presence of solids and base. Indeed, the plain meaning of "removal of the water . . . by heat and vacuum in a flash step" would suggest as much (Schlosberg at col. 5, lines 65-67) followed by two filtration steps in (e) and (g), (Schlosberg at col. 6, lines 1-9). As taught in the Specification, such a step of stripping in the presence of basic material (alkali) and solids would be expected to lead to increase in light ends in the final product that is detrimental to the properties of the end-use application. (*Compare, for example, claim 10 reciting in (ii) treating the crude ester with a base to form a treated ester; then without a stripping step to remove excess alcohol prior to step (iii).*)

Furthermore, a skilled artisan would interpret the use of "bulk of the excess of alcohol" in Schlosberg to mean that some alcohol is removed before step (v), i.e., in step (iv). Indeed, "vacuum flashing" and heating or "stripping" in the presence of alcohol is understood to mean in art necessarily removing at least a portion of the alcohol.¹ As such, Appellants respectfully submit that a *prima facie* case of obviousness has not been established.

However, for the sake of argument, even if such a case had been established, the pending claims are supported by evidence showing unexpected results that are more than sufficient to rebut any *prima facie* case of obviousness. In particular, the subject claims were restricted to dialkyl phthalate esters and are directed to the unexpected results achieved by use of activated carbon (as the absorbent) in combination with the step of filtering prior to stripping of excess alcohol. Neither of the primary references taken alone or in combination with Schlosberg teach or suggest the use of activated carbon and filtering prior to the stripping of excess alcohol. This combination and sequence of steps achieves the unexpected results evidenced in the examples in Specification. (See paragraphs [0090]-[0101] in the Specification of this application's publication, U.S. Patent Application Publication No. 2007/0105999). Rebuttal evidence and arguments can be presented in the specification, *In re Soni*, 54 F.3d 746, 750, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995). Office personnel should consider all rebuttal arguments and evidence presented by applicants. (See, e.g., *Soni*, 54 F.3d at 750, 34 USPQ2d at 1687 (error not to consider evidence presented in the specification)). Thus, Appellants respectfully submit that such a showing is more than adequate to rebut any *prima facie* case of obviousness.

¹ In response to the Answer's reasoning regarding the differences between "flashing" and "stripping," Appellants respectfully disagree and regard the differences as a matter of semantics when both terms refer to the removal of a chemical or substance from a mixture or composition. Furthermore, Appellants respectfully submit that Appellants' interpretation of the term is consistent with what is practiced in industry and the understanding of a skilled artisan as supported by numerous chemical encyclopedias and dictionaries. Thus, Appellants respectfully submit that processes are equivalents when they achieve the same or substantially similar results regardless of their intended purpose.

Additionally, the pending claims were also amended to recite *wherein the plasticizer ester comprises a di-alkyl phthalate selected from at least one of the group consisting of di-2-ethyl hexyl phthalate, di-isononyl phthalate, and di-isodecyl phthalate, characterised by a carbonyl number below 0.2 mg KOH/g, a light ends content of less than 1000 ppm wt, and a liquid volume resistivity (LVR) (in units of 10¹² ohm.cm) that is: i) greater than about 0.3 in the case where di-alkyl is di-2-ethyl hexyl; ii) greater than about 0.6 in the case where di-alkyl is di-isononyl; and iii) greater than about 1.35 in the case where di-alkyl is di-isodecyl*. This recitation is directed to important attributes of the end-use article such as electrical properties and reduction in odour. For a detailed explanation of the importance of these attributes in end-use applications such as, for example, wire and cable insulation and other electrical insulating materials, *see* paragraphs [0004]-[0010] and [0015] in the Specification of this application's publication, U.S. Patent Application Publication No. 2007/0105999. The references as cited above either alone or in combination fail to appreciate the problems associated with perfecting or improving upon such attributes more less offer any solution to improving on these attributes. As such, withdrawal of the rejections is respectfully requested.

The Board of Appeals is respectfully requested to reverse the finality of the office action and remand this application to the Examiner with an instruction to allow the pending claims.

Respectfully submitted,

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Date

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